



10-01-04

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of: Wu *et al.* Confirmation No.: 3091
Serial No.: 10/628,128 Art Unit: 2133
Filed: July 25, 2003 Examiner: To be assigned
For: METHODS FOR SINGLE QUBIT Attorney Docket No.: 11090-013-999
GATE TELEPORTATION (CAM No. 706700-999148)

INFORMATION DISCLOSURE STATEMENT

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In accordance with the duty of disclosure provisions of 37 C.F.R. §1.56, there is hereby provided certain information which the Examiner may consider material to the examination of the subject U.S. patent application. It is requested that the Examiner make this information of record if it is deemed material to the examination of the application.

1. Enclosures accompanying this Information Disclosure Statement are:
 - 1a. ☒ A list of all patents, publications, applications, or other information submitted for consideration by the office.
 - 1b. A legible copy of :
 - ☒ Each U.S. patent application publication and U.S. and foreign patent; **copies of U.S. patents and U.S. patent application publications have not been enclosed, since the U.S. Patent and Trademark Office has waived the requirement under 37 CFR 1.98 (a)(2)(i) for submitting a copy of each cited U.S. patent and U.S. patent application publication for all U.S. patent applications filed after June 30, 2003.**
 - ☒ Each publication or that portion which caused it to be listed on the PTO-1449.
 - ☒ For each cited pending U.S. application, the application specification including the claims, and any drawing of the application, or portion of the application which caused it to be listed on the PTO-1449 including any claims directed to that portion;
 - ☒ all other information or portion which caused it to be listed on the PTO-1449.
 - 1c. ☐ An English language copy of search report(s) from a counterpart foreign application or PCT International Search Report.
 - 1d. ☐ Explanations of relevancy (ATTACHMENT 1(d), hereto) or English language abstracts of the non-English language publications.
2. ☒ This Information Disclosure Statement is filed under 37 C.F.R. §1.97(b):
 - ☐ Within three months of the filing date of a national application other than a

continued prosecution application under §1.53(d);

- ☐ Within three months of the date of entry of the national stage as set forth in §1.491 in an international application;
- ☒ Before the mailing of the first Office action on the merits;
- ☐ Before the mailing of a first Office action after the filing of a request for continued examination under §1.114.

3. ☐ This Information Disclosure Statement is filed under 37 C.F.R. §1.97(c) after the period specified in 37 C.F.R. §1.97(b), but before the mailing date of any of a final action under 37 C.F.R. §1.113, a notice of allowance under 37 C.F.R. §1.311 or an action that otherwise closes prosecution in the application.

(Check either Item 3a or 3b)

- 3a. ☐ The Certification Statement in Item 5 below is applicable. Accordingly, no fee is required.
- 3b. ☐ The \$180.00 fee set forth in 37 C.F.R. §1.17(p) in accordance with 37 C.F.R. §1.97(c) is:
- ☐ enclosed
 - ☐ to be charged to Jones Day Deposit Account No. 50-3013, referencing CAM No. 706700-999147.

(Item 3b to be checked if any reference known for more than 3 months)

4. ☐ This Information Disclosure Statement is filed under 37 C.F.R. §1.97(d) after the period specified in 37 C.F.R. §1.97(c), but on or before the date of payment of the issue fee.

The Certification Statement in Item 5 below is applicable.

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5. ☐ Certification Statement (applicable if Item 3a or Item 4 is checked)

(Check either Item 5a or 5b)

- 5a. ☐ In accordance with 37 C.F.R. §1.97(e)(1), it is certified that each item of information contained in this Information Disclosure Statement was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement.
- 5b. ☐ Each item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart application, and the communication was not **received** by any individual designated in 37 C.F.R. §1.56(c) more than thirty days prior to the filing of this information disclosure statement.
- 5c. ☐ Pursuant to 37 C.F.R. §1.704(d), each item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart application, and the communication was not

received by any individual designated in 37 C.F.R. §1.56(c) more than thirty days prior to the filing of this information disclosure statement.

6. ☐ This application is a continuation application under 37 C.F.R. §1.60 or §1.53(b) or (d).

(Check appropriate Items 6a, 6b and/or 6c)

- 6a. ☐ A Petition to Withdraw from issue under 37 C.F.R. §1.313(b)(5) is concurrently filed herewith.
- 6b. ☐ Copies of publications listed on Form PTO-1449 from prior application Serial No. , filed on , of which this application claims priority under 35 U.S.C. §120, are not being submitted pursuant to 37 C.F.R. §1.98(d).
- 6c. ☐ Copies of the publications listed on Form PTO-1449 were not previously cited in prior application Serial No. , filed on , and are provided herewith.
7. ☐ This is a Supplemental Information Disclosure Statement. (Check Item 7a)
- 7a. ☐ This Supplemental Information Disclosure Statement under 37 C.F.R. §1.97(f) supplements the Information Disclosure Statement filed on . A bona fide attempt was made to comply with 37 C.F.R. §1.98, but inadvertent omissions were made. These omissions have been corrected herein. Accordingly, additional time is requested so that this Supplemental Information Disclosure Statement can be considered as if properly filed on .
8. ☒ The Commissioner is authorized to charge any additional fee required or credit any overpayment for this Information Disclosure Statement and/or Petition to Jones Day Deposit Account No. 50-3013.
9. ☒ No admission is made that the information cited in this Statement is, or is considered to be, material to patentability nor a representation that a search has been made (other than a search report of a foreign counterpart application or PCT International Search Report if submitted herewith). 37 C.F.R. §§1.97(g) and (h).

Respectfully submitted,

Date: September 29, 2004


Brett Lovejoy

JONES DAY

222 East 41st Street

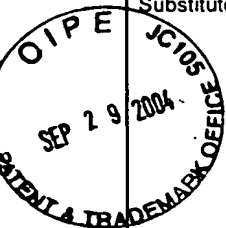
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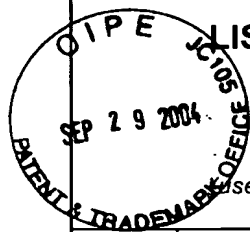
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LIST OF REFERENCES BY APPLICANT <i>(use as many sheets as necessary)</i>				Application Number	10/628,128
				Filing Date	7/25/2003
				First Named Inventor	Lian-Ao Wu
				Art Unit	2133
				Examiner Name	To be assigned
Sheet	1	of	3	Attorney Docket Number	11090-013-999
U.S. PATENT DOCUMENTS					
Examiner Initials	Cite No. ¹	Document Number Number - Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	AA	US- 5,307,410	4-26-1994	Bennett	
	AB	US- 5,917,322	6-29-1999	Gershenfeld et al.	
	AC	US- 6,563,311 B2	5-13-2003	Zagoskin	
	AD	US- 6,459,097 B1	10-01-2002	Zagoskin	
	AE	US- 2003/0164490 A1	9-04-2003	Blais	
	AF	US- 2004/0000666 A1	1-01-2004	Lidar et al.	
	AG	US- 2004/0109631 A1	6-10-2004	Franson et al.	
	AH	US- 60/349,663		Zagoskin et al.	
FOREIGN PATENT DOCUMENTS					
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	AI	WO- 99/14614 A1	03-25-1999	Kane	
OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)					
	AJ	Averin, D.V., 2002, "Quantum Nondemolition Measurements of a Qubit," Phys. Rev. Lett. 88 , 207901.			
	AK	Averin, D.V., R. Fazio, 2002, "Active suppression of dephasing in Josephson-junction qubits," ArXiv.org preprint server: cond-mat/0212127.			
	AL	Barenco, A., C.H. Bennett, R. Cleve, D.P. DiVincenzo, N. Margolus, P. Shor, T. Sleator, J.A. Smolin, and H. Weinfurter, 1995, "Elementary gates for quantum computation," Phys. Rev. A 52 , 3457-3467.			
	AM	Bennett, C.H., G. Brassard, C. Crépeau, R. Jozsa, A. Peres, and W.K. Wootters, 1993, "Teleporting an Unknown Quantum State via Dual Classical and Einstein-Podolsky-Rosen Channels," Phys. Rev. Lett. 70 , pp. 1895-1899.			
	AN	Blais, A., and A.M. Zagorskin, 2000, "Operation of universal gates in a solid-state quantum computer based on clean Josephson junctions between d-wave superconductors," Phys. Rev. A 61 , 042308.			
Examiner Signature				Date Considered	



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LIST OF REFERENCES BY APPLICANT

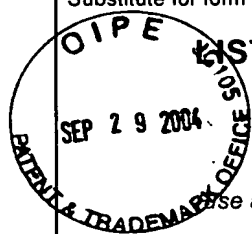
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AO	Brown, K.R., D. A. Lidar, and K. B. Whaley, 2001, "Quantum computing with quantum dots on quantum linear supports," Phys. Rev. A 65 , 012307.
AP	Burkard, G., H.-A. Engel, and D. Loss, 2000, "Spintronics and Quantum Dots for Quantum Computing and Quantum Communication," published on ArXiv.org preprint server: cond-mat/0004182 (2000).
AQ	Childs, A.M., I.L. Chuang, and D.W. Leung, 2000, "Realization of quantum process tomography in NMR," ArXiv.org preprint server: quant-ph/0012032.
AR	Choi, M.-S., 2001, "Solid-state implementation of quantum teleportation and quantum dense coding," Phys. Rev. A 64 , 054301.
AS	Choi, M.-S., M.Y. Choi, T. Choi, and S.-I. Lee, 1998, "Cotunneling Transport and Quantum Phase Transitions in Coupled Josephson-Junction Chains with Charge Frustration," Phys. Rev. Lett. 81 , 4240-4243.
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AU	Cottet, A., D. Vion, A. Aassime, P. Joyez, D. Esteve, and M.H. Devoret, 2002, "Implementation of a combined charge-phase quantum bit in a superconducting circuit," Physica C 367 , pp. 197-203.
AV	DiVincenzo, D.P., 2000, "The Physical Implementation of Quantum Computation", published on ArXiv.org preprint server: quant-ph/0002077.
AW	Dodd, J.L., M. A. Nielsen, M.J. Bremner, and R.T. Thew, 2002, "Universal quantum computation and simulation using any entangling Hamiltonian and local unitaries," Phys. Rev. A 65 , 040301.
AX	Falci, G., R. Fazio, G.M. Palma, J. Siewert, and V. Vedral, 2000, "Detection of geometric phases in superconducting nanocircuits," Nature 407 , 355-358.
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AZ	Imamoglu, A., D.D. Awschalom, G. Burkard, D.P. DiVincenzo, D. Loss, M. Sherwin, and A. Small, 1999, "Quantum Information Processing Using Quantum Dot Spins and Cavity QED," Phys. Rev. Lett. 83 , pp. 4204-4207.
BA	Kane, B.E., 1998, "A silicon-based nuclear spin quantum computer," Nature 393 , 133-137.
BB	Kane, B.E., 2000, "Silicon-based Quantum Computation," published on ArXiv.org preprint server: quant-ph/0003031.
BC	Kikkawa, J.M., I.P. Smorchkova, N. Samarth, and D.D. Awschalom, 1997, "Room-Temperature Spin Memory in Two-Dimensional Electron Gases," Science 277 , pp. 1284-1287.
BD	Knill, E., R. Laflamme, and G.J. Milburn, 2001, "A scheme for efficient quantum computation with linear optics", Nature 409 , pp. 46-52.
BE	Koashi, M., T. Yamamoto, and N. Imoto, 2001, "Probabilistic manipulation of entangled photons," Phys. Rev. A, 63 , 030301.
BF	Korotkov, A.N., 1999, "Continuous quantum measurement of a double dot," Phys. Rev. B 60 , pp. 5737-5742.
BG	Korotkov, A.N., 2001, "Selective quantum evolution of a qubit state due to continuous measurement," Phys. Rev. B 63 , 115403.

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